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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

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INVENTOR(S)		
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
GERRIT	HOLLEMANS	EINDHOVEN, THE NETHERLANDS

☒ *Additional inventors are being named on the 1 separately numbered sheets attached hereto*

TITLE OF THE INVENTION (280 characters max)

MULTISCREEN DISTRIBUTED DISPLAY

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ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 12 ☐ CD(s), Number [ ]

☒ Drawing(s) *Number of Sheets* 1 ☐ Other (specify) [ ]

☐ Application Data Sheet. See 37 CFR 1.76

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT *(check one)*

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check or money order is enclosed to cover the filing fees

FILING FEE AMOUNT ($)

☒ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: 14-1270 $160.00

☐ Payment by credit card. Form PTO-2038 is attached.

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are: ____.

Respectfully submitted,

SIGNATURE Gregory L. Thorne Date January 20 2004

TYPED or PRINTED NAME GREGORY L. THORNE REGISTRATION NO. *(if appropriate)* 39,398

TELEPHONE (914) 332-0222 Docket Number: US040052

USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

In one portion of the screen of the one or more other computer systems, typing for example of a question, is mirrored back to each computer of the distributed computer systems to enable an ongoing chat environment. Again, in Sametime™, one computer acts as the master computer display with the other computers acting as slave displays.

In another system, such as shown in United Kingdom Patent Publication No. GB 2,384,064A, a mobile phone is utilized by another device to enable connection of intelligent devices to a network via the mobile phone and mobile phone network. In this system, the phone is the means for the intelligent device to access the wireless network.

A problem exists with this system in that none of these systems enable operation of the devices without having at least a server system to coordinate and manage the distribution of images across the multiple devices. Further, even the distribution of a single user interface across the multiple devices does not add anything to the capabilities of the given devices.

Accordingly, it is an object of the present invention to overcome these disadvantages and/or others of the prior art.

These and other objects of the present invention are achieved by a system including two or more devices that are enabled for screen sharing. In operation, a screen connect function is resident on at least one of the devices. Activation of the screen connect function initiates the screen sharing between the devices. In accordance with the present invention, the screen sharing may include a sharing of a display capability of one device with the other device. Additionally or in place of the sharing of the display capability, other functionality such as processing capabilities, touch screen control, etc. may be shared between devices.

The screen sharing may include a transfer of a user interface or a portion thereof from a first device to a second device. This user interface or portion thereof operated on the second device functions as a user interface or together with the user interface of the first device. The screen sharing may be enabled when the devices are brought into proximity with each other. A screen connect function may initiate the screen sharing.

In either event, by initiating the screen sharing, functionality on one of the devices is utilized to enhance or add functionality for the other device.

These and other features and advantages of the present invention will become more apparent from the accompanying drawings and the following detailed description.

Further operation of the present invention will be described herein with regard to the illustrative system 100, shown in FIG. 1, and with regard to FIG. 2 that shows a flow diagram 200 in accordance with an embodiment of the present invention.

As illustrated in flow diagram 200, during act 210, two devices, such as mobile devices, are in the vicinity of each other. This proximity condition may have occurred during act 210 or may have been in existence prior to act 210. There is not even really a requirement for any particular proximity between the devices, such as next to each other. In one embodiment of the present invention it may be useful for the devices to be in near proximity to each other. However, all that is really required is that the devices 110, 150 be in sufficient proximity to enable communication between the devices 110, 150.

Thereafter, during act 220 the devices 110, 150 due to proximity, depression of a control button 130, 170 operating as a screen connect button, or other means are enabled for screen sharing that occurs during act 240 in accordance with the present invention. Screen sharing in accordance with the present invention is intended to mean that a display, functionality, user interface or portion thereof etc. of one device, such as device 110, may be utilized to operate functionality, etc. on another device, such as device 150. For example, device 150 is illustratively shown as a cellular telephone. Cellular telephones typically have very limited display capabilities. Device 110 is illustratively shown as a PDA. PDAs typically today have greater capabilities including better processing capabilities and better display capabilities such as larger displays, better visibility, more functionality, such as touch screens, etc. Although, as is clear, the capabilities of the devices may also be equal and yet, by sharing capabilities to perform an operation, the capabilities of any one of the devices would still be enhanced.

In accordance with one embodiment of the present invention, during act 240, at least one of functions, operations, etc. of one device are enabled for manipulation on the other device. For example, during act 240, the phone book and dialing capabilities of the device 150 (shown as a cellular telephone), may now be manipulated on the PDA. It should be understood that this is not intended to show a conventional PDA that is also a cellular phone and thereby the communication in accordance with the present invention does not add functionality. What is intended in accordance with the present invention is that by the direct communication between the devices 110, 150, the heretofore functionality not present on the one device, such as device 110, is enabled or accomplished.

Accordingly, prior to the communication between the devices 110, 150, the ability for instance to manage an address book of the device 150 on the device 110 was not present on the device 110. However, after the communication between the devices 110, 150 in accordance with the present invention, the ability for instance to manage the address book of the device 150 on the device 110 is present on the device 110. This is not the only functionality that may be enhanced however in accordance with the present invention. Other capabilities may also be enabled between the devices 110, 150, such as an ability to view an image on one device, e.g., device 110, which is stored on the device 150.

Further functionality may also be enabled in accordance with the screen sharing of the present invention, for example, perhaps, by a communication in accordance with the present invention between the devices 110, 150, the device 110 may be manipulated to make a telephone call using the display and manipulation capability of the device 110 and the calling capability of the device 150. In this embodiment, by the act 220, the display and functionality of the device 110 may now show display and functionality of the device 150. In other words, the display 120 of the device 110 may now show, for example, a virtual keypad that may be operated for initiating a telephone call. In one embodiment, the display 120 may also be enabled for touch input as is typical for a PDA device. By operation in accordance with the present invention, the touch input capability of the display 120 may be utilized to manipulate the dialing features of the device 150 to initiate a telephone call. Further, perhaps even microphone and speaker capabilities of the device 110 may operate to further facilitate use of the calling capabilities of the device 150. These abilities may also be a true sharing in that the operation heretofore resident and/or operating on one of the devices, are now operated through use of both devices. For example, it may be useful to edit on the device 110 textual portions of a phone book entry that are resident on the device 150. However, for this same phone book entry, it may be useful to enter a voice identification for this entry directly on the device 150. Accordingly, the term "screen sharing" as utilized herein should be understood to encompass any one or combination of each of these shared capabilities in accordance with the present invention.

In one embodiment, the functionality may be simply facilitating operation of one device, such as device 150, having limited display capabilities, by displaying the same or similar displays on a device, such as device 110, having less limited display capabilities. In this way, the typical displays of the device 150 may merely be shown in a larger format on the device 110. In this operation, the device 150 may transmit complete display

9. The system of Claim 2, wherein a portion of a user interface of said one of said plurality of devices is transferred to said other of said plurality of devices to operate as a portion of the user interface of said one of said plurality of devices.

10. The system of Claim 1, wherein said screen connect function is enabled when each of said plurality of devices is in close proximity to each other of said plurality of devices.

11. The system of Claim 10, wherein close proximity between each of said plurality of devices enables a screen connect icon on one of said plurality of devices to enable activation of said screen connect function.

12. A portable device, the portable device comprising:

a means to enable screen sharing from said portable device to another device; and

a screen connect function, wherein activation of said screen connect function initiates said screen sharing between the devices.

13. The portable device of Claim 12, wherein said screen sharing includes at least one of sharing display capabilities and functionality.

14. The portable device of Claim 12, wherein said device is configured to user-selectably enable an operation resident on said device to be transferred for operation on another device.

15. The portable device of Claim 12, wherein said device is configured so that a selected operation determines what portion of that operation is transferred for manipulation on another device.

ABSTRACT

A system including two or more devices that are enabled for screen sharing. A screen connect function is resident on at least one of the devices. Activation of the screen connect function initiates the screen sharing between the devices. The screen sharing may include a sharing of a display capability of one device with the other device. Additionally or in place of the sharing of the display capability, other functionality such as processing capabilities, touch screen control, etc. may be shared between devices. The screen sharing may include a transfer of a user interface or portion thereof from a first device to a second device. This user interface or portion thereof operated on the second device functions as a user interface of the first device. The screen sharing may be enabled when the devices are brought into proximity with each other. A screen connect function may initiate the screen sharing.

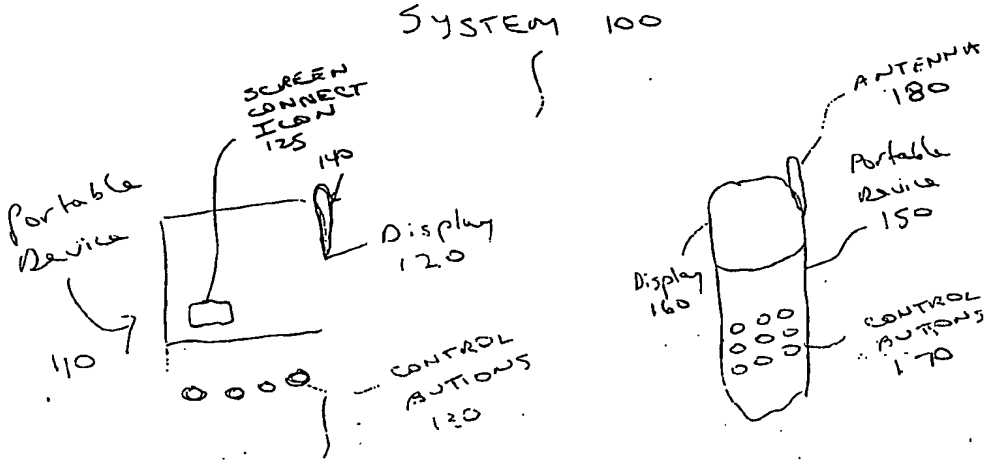

FIG. 1

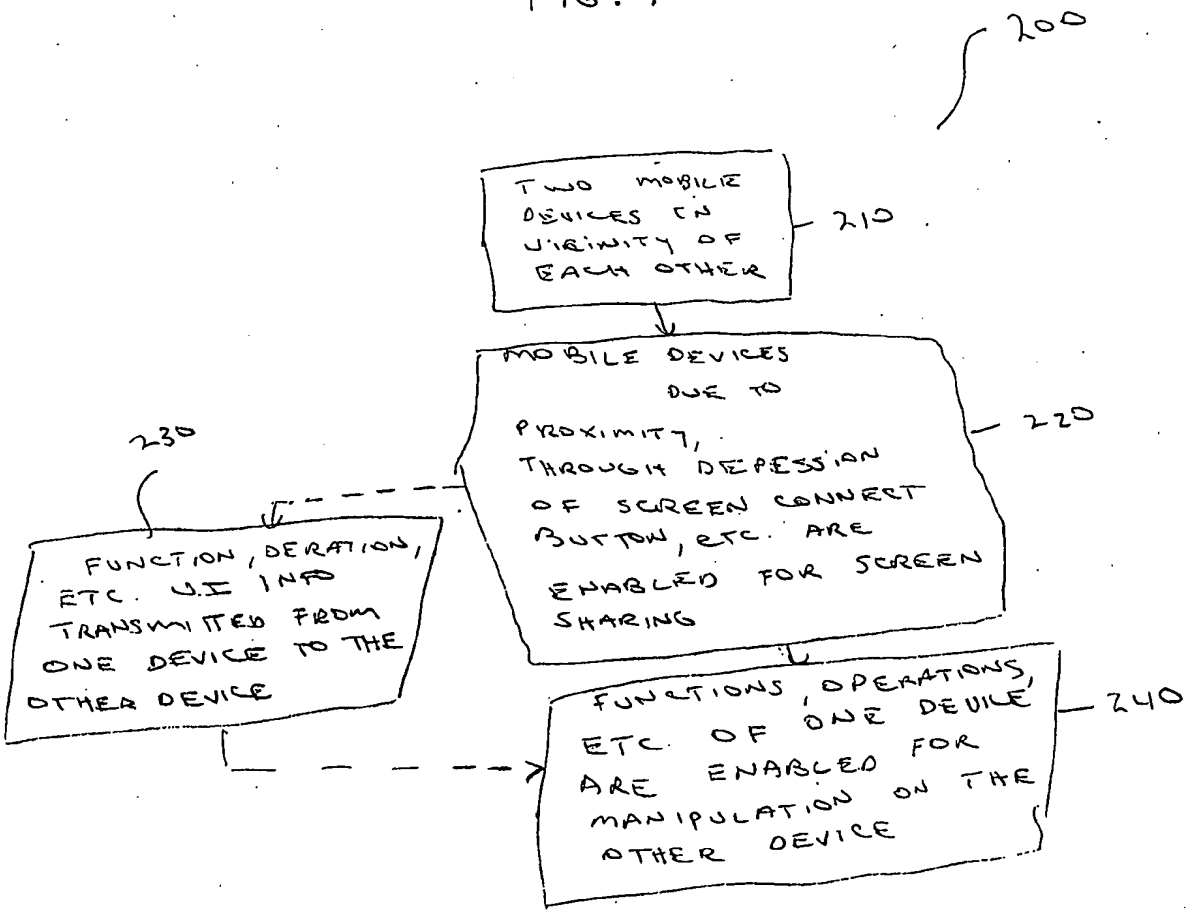

FIG. 2